19990423.ba v02_n516.bam.990423

>From ???@??? Sat Apr 24 07:55:40 1999
Message-Id: <199904231443.JAA29797@sco.theporch.com>
Date: Fri, 23 Apr 1999 09:43:16 CDT
From: Old Tube Radios <boatanchors@theporch.com>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: BOATANCHORS digest 2516

BOATANCHORS Digest 2516

Topics covered in this issue include:

1) National "Coil-Catacomb" research continues
by "Lawrence R. Ware" <lrware@pipeline.com>
2) Re: vintage mobile
by Paul Nelson <drhydro@ames.net>
3) Re: National "Coil-Catacomb" research continues
by "D. Reaves" <dr@cei.net>
4) Re: Phasotrons
by "Steve" <scb@loki.internettport.net>
5) Correction - Phasitrons was Re: Phasotrons
by "Barry L. Ornitz" <ornitz@tricon.net>
6) AR-77 Receiver colours
by David Prince <davprin@gil.com.au>
7) Re: National "Coil-Catacomb" research continues
by Hue Miller <kargokult@proaxis.com>
8) RCK-N: WAS ->Re: National "Coil-Catacomb" research continues
by "Lawrence R. Ware" <lrware@pipeline.com>
9) Re: Phasotrons
by "Roberta J. Barmore" <rbarmore@indy.net>
10) Anybody from SFO area going to the Military Meeting?
by Heinz und Hannelore Breuer <hbreuer@debitel.net>
11) Re[2]: 15 METERS
by Brian.Harris@sv.sc.philips.com (Brian Harris)
12) Signing off...
by William Donzelli <william@ans.net>
13) the HQ100 and Frank Lester
by thompson@mindspring.com
14) Rotary Inductor needed
by "Herbert M. Rosenthal" <herbrose@lobo.net>
15) For Sale: Various items / equipment
by "Schroeder, Russell G" <Russell.Schroeder@usa.xerox.com>
16) RE: "Needs Alignment"
by Kim Herron <kherron@voyager.net>
17) Re: Correction - Phasitrons was Re: Phasotrons
by "A. B. Bonds" <ab@vuse.vanderbilt.edu>
18) Re: Loktals

by John M Iverson <jackiv@juno.com>

Message-Id: <3.0.5.32.19990422220437.0091b370@pop.pipeline.com>
Date: Thu, 22 Apr 1999 22:04:37 +0000
To: Old Tube Radios <boatanchors@theporch.com>
From: "Lawrence R. Ware" <lrware@pipeline.com>
Subject: National "Coil-Catacomb" research continues
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Good evening folks!
A couple of times a year I try to remind everyone that my research on the history of the National Radio Company, Inc. "Coil-Catacomb" radios continues.

So far dozens of you have contributed to my research and my records. I often feel I don't thank everyone enough, because without your help this whole project would still be going nowhere.

Because so many of you have contributed manual copies, S/N's and data plate information, pictures, thoughts, comments and criticism and corrections; my knowledge about these fine old radios continues to grow. :-)

So far I've gotten two articles published, In the AWA Review (vol. XI) and in ER (March, 1999.)
Another is out to several magazines for review as I type this.

I'm sometimes far slower than I would like to respond to letters and e-mail, but I'm trying to improve. (I digress...)

Anyway, a number of huge holes in my records still remain to be filled and tonight I'd like to ask everyone to see if they can help me locate the following documents:

National R115 & R1116 (Coast Guard/Navy?) documents and data plate info.

A good photocopy of the NC-80/81X manual, (mine is quite poor.)

Any AN/GRR-3 documents.
Any BC-903-A documents.
Any type NAO and/or type NBL documents.

Manual for the NC-120.

Any NC-127 documents.

Any type RAO-1, RAO-2, RAO-5, RAO-8 or RAO-9 documents.

Any RC-120 documents.

Any type RCE documents.
Any type RCH documents.

A real mystery: Any type RCK documents. (This radio has a strange
story behind it, and I'm not at all sure I have it yet.)
A type RCK was built as part of the Airways Ground Receiver series for
the CAA. It seems National also built a type RCK for the Navy,
the type RCK-N. This may *not* be at all the same radio as the CAA
version. Also there seems to have been a type RCK-N12-C with several
differences and Cyrillic (Russian) markings!
Confused yet? I sure am!
Help me out guys, someone has to have some documents that can shed
some light on this mystery....

I'll be quite happy to buy photocopies or original manuals, swap
manual copies if I have something you need, or whatever....
Drop me a line. :-)

Thanks again for your time and your help!
-Larry Ware

# Larry Ware, a National Coil-Catacomb nut.
# Admirer, Collector, Restorer of National Radio Company
# receivers and other artifacts.
# Orlando, Florida
# lrware@pipeline.com

Message-Id: <v04003a01b345ab615b3f@[206.26.104.93]>
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"
Date: Thu, 22 Apr 1999 23:52:18 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: Paul Nelson <drhydro@ames.net>
Subject: Re: vintage mobile

When I was in high school in the late 50's, I had a '51 Jeep- no top- with
a Leece-Neville 6v 100 amp alternator. It was festooned with antennas- a
BC-1306 for HF with its weird vibrator PS, an SCR-522 VHF (I had some sort
of 6v PS for that thing, I don't remember now how I made it work) and a
Twoer. A coupla years later, a '54 Chevy was decorated with the Twoer and

an antenna poking through the roof... those were the daze. Mobile op is so simple now.... for one thing, 12v is so much more forgiving than 6....

```
Paul Nelson W5GNF               "When I go, I want to go quietly, in my
Ames, Iowa                       sleep, like my grandfather- not
                                 screaming, like his passengers."
(DrHydro@ames.net)
                                 "More hay, Trigger?"
 Cessna 140 N77149               "No thanks, Roy, I'm stuffed."
```

Message-ID: <00d501be8d47$69191b00$c2f666a6@djr>
From: "D. Reaves" <dr@cei.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: National "Coil-Catacomb" research continues
Date: Fri, 23 Apr 1999 00:09:03 -0500
MIME-Version: 1.0
Content-Type: text/plain;
charset="iso-8859-1"
Content-Transfer-Encoding: 7bit

Larry, your efforts are applauded to document the history of these fine old receivers. You asked about the Navy RCK. I don't have any documentation or manual, but the RCK I have is built by Scott. I have it packed up to carry to the Little Rock hamfest this weekend or I'd post the nomenclature from the tags. I hope to find it a new home as I keep stumbling over it - VHF-AM receivers make good ballast. I figure about 80 pounds.

Don Reaves WA5BBS dr@cei.net
Roland AR   R-390 list manager

Message-Id: <199904230528.AAA24298@loki.internettport.net>
From: "Steve" <scb@loki.internettport.net>
To: Old Tube Radios <boatanchors@theporch.com>
Date: Fri, 23 Apr 1999 00:10:40 +0000
MIME-Version: 1.0
Content-type: text/plain; charset=US-ASCII
Content-transfer-encoding: 7BIT
Subject: Re: Phasotrons
CC: "Old Tube Radios" <boatanchors@theporch.com>

>"The Phasotron is discussed in detail in Samuel Seeley's "Functional Circuits and Oscillators".---- A number of different techniques were used in the early days to develop FM, including a strange one with a CRT having no phosphor but instead a spiral target. The deflection plates would move the beam creating a net

change in the inductance of an associated circuit.

Hello Barry;

It's impossible to read all this without thinking of the utter simplicity of a silicon junction in a varactor network. I remember seeing the phasetron in the College FM transmitter (KUER) at the University of Utah in the early '60s. The techs thought it was an interesting but goofy setup then. BTW, is the this THE Seeley of "Foster-Seeley"?

Regards; Steve

Message-Id: <199904230627.CAA18089@flash.naxs.net>
From: "Barry L. Ornitz" <ornitz@tricon.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Correction - Phasitrons   was   Re: Phasotrons
Date: Fri, 23 Apr 1999 02:29:18 -0400

In my earlier note, my failing memory is excessively apparent.

The book I referred to was written by Herbert Reich ("Functional Circuits and Oscillators") and it covers the magnetron decade counting tubes and similar devices. It also discusses the negative resistance effects of the Phantastron.

The correct book is by Samuel Seely ("Electron-Tube Circuits"). Note the correct name spelling. Only two "E's". Also note the correct name of the tube is Phasitron.

My only defense is that Seely is often confused with Samuel Seeley who is associated with the ratio detector for FM. [Foster and Seeley: Proc. IRE, 25,289 (1937)]

In addition to the GE Phasitron, Seely's book covers the RCA and Federal methods of all-electronic stabilization of early FM broadcast systems, and also the Bell Laboratories method which used a synchronous motor in a servomechanism to keep the oscillator center frequency locked to a crystal standard. It also covers Armstrong's method in detail.

OK? Is everyone confused and tongue-twisted yet? I won't mention this other book that discusses a tube called a Phanotron... (related to a thyratron).

73, Barry   WA4VZQ   ornitz@tricon.net

Message-ID: <37201E65.284ADBAB@gil.com.au>
Date: Fri, 23 Apr 1999 17:16:53 +1000
From: David Prince <davprin@gil.com.au>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: AR-77 Receiver colours
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

G'day all,

What was the original colour of the RCA AR-77's. Light Blue?

Cheers

--
Dave Prince VK4KDP
Ipswich, Queensland, Australia
davprin@gil.com.au
http://www.home.gil.com.au/~davprin

Message-Id: <3.0.5.32.19990423005210.007cce80@proaxis.com>
Date: Fri, 23 Apr 1999 00:52:10 -0700
To: Old Tube Radios <boatanchors@theporch.com>
From: Hue Miller <kargokult@proaxis.com>
Subject: Re: National "Coil-Catacomb" research continues
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

At 10:04 PM 4/22/99 +0000, Lawrence R. Ware wrote:

>A real mystery: Any type RCK documents. (This radio has a strange
>story behind it, and I'm not at all sure I have it yet.)
>A type RCK was built as part of the Airways Ground Receiver series for
>the CAA. It seems National also built a type RCK for the Navy,
>the type RCK-N. This may *not* be at all the same radio as the CAA
>version.

The Navy's RCK was not referred to as RCK-N in any literature or
equipment list i have ever seen! it is a very heavy multiple channel
but quartz controlled VHF AM receiver. the 'standard ham conversion'
was to remove the oscillator from quartz control, making it tunable.
my friend greg got his start in VHF monitoring using this receiver
to listen to SEA-TAC air traffic.

i would think the Airways ground receiver was HF, not VHF.

Coast Guard, CAA, and Forest Service radio equipment had quite a bit of leeway in nomenclaturing, didn't adhere to a rigorous system like the regular military did (mostly).
hue

Message-Id: <3.0.5.32.19990423042312.007db4d0@pop.pipeline.com>
Date: Fri, 23 Apr 1999 04:23:12 +0000
To: Old Tube Radios <boatanchors@theporch.com>
From: "Lawrence R. Ware" <lrware@pipeline.com>
Subject: RCK-N: WAS ->Re: National "Coil-Catacomb" research continues
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

>At 10:04 PM 4/22/99 +0000, Lawrence R. Ware wrote:
>
>>A real mystery: Any type RCK documents. (This radio has a strange
>>story behind it, and I'm not at all sure I have it yet.)
>>A type RCK was built as part of the Airways Ground Receiver series for
>>the CAA. It seems National also built a type RCK for the Navy,
>>the type RCK-N. This may *not* be at all the same radio as the CAA
>>version.

At 00:52 04/23/1999 -0700, Hue Miller wrote:
>The Navy's RCK was not referred to as RCK-N in any literature or
>equipment list i have ever seen! it is a very heavy multiple channel
>but quartz controlled VHF AM receiver. the 'standard ham conversion'
>was to remove the oscillator from quartz control, making it tunable.
>my friend greg got his start in VHF monitoring using this receiver
>to listen to SEA-TAC air traffic.

Interesting, I hold in my hand copies of photographs (provided to me by Alan Douglas & the AWA) from the original National Radio Company, Inc. archives. (Interested parties may examine two of them themselves on page 226 of AWA Review XI. Figure 47 & 48.) Captions on the original archive photographs identify the radios as models RCK-N and RCK-N12-C. I have several more, not published in the article, and of types RCK and RCK-1, again from the factory archives.

Two different owners of type RCK-N radios have contacted me since the ER article was published last month. Both have commented on and described that the radios they own are marked on the power transformers, filter chokes, IF cans etc. with the USN "anchor" type logos usually found in Navy National radios like the RAO series. Several differences in design from the CAA RCK versions, including different tube line up, and different frequency coverage have been noted.

Other gents with CAA version RCK's have supplied information concerning

the radios they own. Without all the details, these are quite
different examples of Nationals coil-catacomb (NC-100 based) designs.

>i would think the Airways ground receiver was HF, not VHF.
>Coast Guard, CAA, and Forest Service radio equipment had quite
>a bit of leeway in nomenclaturing, didn't adhere to a rigorous
>system like the regular military did (mostly).

The Airways Ground Receiver(s), was/is a series of HF NC-100 based
radios made for the CAA from 1937 to 1948. One of these radios
is known as type RCK.
I'm unfamiliar with any Navy VHF radio known as the RCK.

I am trying to locate more information on some modified National
NC-100 based radios, that the National Factory archives refer to
as type RCK-N & RCK-N12-C.

Based on both the factory photographic records and the reported
internal anchor markings, (which are consistent with many other
National models built for the Navy) I suspect that the type RCK-N
National was a military/Navy variant. The Cyrillic language marked
RCK-N12-C may have been a lend-lease product shipped only to the
USSR during the war years.

The search continues....
-Larry

# Larry Ware, a National Coil-Catacomb nut.
# Admirer, Collector, Restorer of National Radio Company
# receivers and other artifacts.
# Orlando, Florida
# lrware@pipeline.com

Date: Fri, 23 Apr 1999 06:09:16 -0500 (EST)
From: "Roberta J. Barmore" <rbarmore@indy.net>
To: Old Tube Radios <boatanchors@theporch.com>
cc: Old Tube Radios <boatanchors@theporch.com>
Subject: Re: Phasotrons
Message-ID: <Pine.SUN.3.96.990423054306.4150A-100000@indy1>
MIME-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

Hi!

On Fri, 23 Apr 1999, Steve wrote:

> It's impossible to read all this without thinking of the utter
> simplicity of a silicon junction in a varactor network.

Ahh, but a reactance-tube modulator is not very much more complicated (and is just about the exact same trick).

Nope, that's not the hard part; what drove a lot of the odder FM broadcast modulator circuits--patents aside--was the need to impose very serious stability on a VHF signal, whilst wobbling it back and forth at an audio rate at the same time. Armstrong's orginal method, while effective, was *very* high on parts-count. (He was, essentially, assembling an FM signal from its component parts and getting high deviation by doing a *lot* of multiplication and mixing back down and multiplying up again, with--if I remember right--some inobvious tricks to cancel frequency drift).

As far back as 1941, "stabilized" FM modulators were showing up in ham handbooks, with a reactance-tube modulator running at, oh, 7 mc/s and a crystal-controlled osc/mixer (6K8ish) sniffing the output, followed by discriminator at a low IF (455 kc/s) producing a filtered DC voltage that got fed back to the reactance modulator. Filtering the discriminator o/p to long-term-average the modulation gives you a voltage proportional to the difference between the xtal freq (+ or - the IF) and the center freq of the modulated oscillator. ...Alas, while simple, it's unsuited to commercial applications, as you can very easily use up all the available deviation just holding the thing on-freq through normal drift, and have none left over for nice, linear modulation! For NBFM in ham bands up to 10m, it was a good trick...but for postwar, ~100 mc/s wideband FM BC, by the time you multiplied up to that range, you were headin' for trouble. (However, this little gadget is essentially a phase-locked loop, done in tubes and with low parts count; it suffers from a lack of VCO range but is pretty slick thinkin' with the available technology).

Thus we got GE Phasitron-based exciters and the RCA jobs that filled up half a rack and included a nice 1" 'scope, a low-speed motor driving a variable condenser for AFC and a *heap* o' knobs, and other interesting, frustrating, tweak-intensive kludges. FM didn't get *really* easy until PLLs got easy and cheap!

73,
--Bobbi
(Who, thank you, is neither).

KB9GKX "RJ" rbarmore@indy.net Roberta J. (Bobbi) Barmore
FISTS #3388 * G-QRP #10001 * ARRL * RSGB * WIA
Appreciator Of Vacuum-Tube Ham Gear and Vintage Keys

Message-ID: <37205561.5471@debitel.net>
Date: Fri, 23 Apr 1999 13:11:38 +0200

From: Heinz und Hannelore Breuer <hbreuer@debitel.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Anybody from SFO area going to the Military Meeting?
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

Hi,

is anybody from the SFO bay area going to the military
meeting in San Louis Obispo next week and has some room
left in his car to bring back a Collins 32RA transmitter?
I bought it from Larry, W0OGH in Arizona late last year
and couldn't pick it up so far. Larry is heading to the
meeting and offered to take it along.
I will of course cover any expenses and a share of the
gas bill too.
73 from Germany
Heinz - KF6FNC

Mime-Version: 1.0
Date: Fri, 23 Apr 1999 05:58:26 -0700
Message-ID: <0030D6C1.1914@svlima.sv.sc.philips.com>
From: Brian.Harris@sv.sc.philips.com (Brian Harris)
Subject: Re[2]: 15 METERS
To: Old Tube Radios <boatanchors@theporch.com>
Content-Type: text/plain; charset=US-ASCII
Content-Transfer-Encoding: 7bit
Content-Description: cc:Mail note part

Interesting dissertation, Doug.

Perhaps worthy of mention is the Supreme AF-100, which came and went in 1947,
(my birth year) with a 15 meter bandswitch position and coil.

73, Brian

Date: Fri, 23 Apr 1999 07:33:06 -0400 (EDT)
From: William Donzelli <william@ans.net>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Signing off...
Message-Id: <Pine.GSO.3.96.990423073209.25900C-100000@titan.purch.ans.net>
Mime-Version: 1.0
Content-Type: TEXT/PLAIN; charset=US-ASCII

I will be off the list for a short time, back with a new email address.

See you in a bit!

William Donzelli
william@ans.net

From: thompson@mindspring.com
Message-ID: <002601be8d89$7fac8040$af6256d1@default>
To: Old Tube Radios <boatanchors@theporch.com>
Subject: the HQ100 and Frank Lester
Date: Fri, 23 Apr 1999 09:02:09 -0400

The HQ100 was the first of the new receivers from Hammarlund. Frank Lester W2AMJ (now W4AMJ and still spry at 91+) was the father of this new line of gear. The HQ110 followed a year later and had a true VFO for CW but not a real product detector for CW and SSB. Both the HQ100 and HQ110 did not require a decent antenna to hear the world and were so much more stable than my old S-40B especially on 15 and 10.

The leap forward that Frank Introduced was the circuits in the HC-10 converter (really not a slicer but a complete rear end to the IF portion of a receiver). The 60kcs IF's in the HC-10 were adapted to the new HQ170 (a blend of the HQ110 and HC-10). Also the circuits appeared in the HQ145 and HQ180 (updates to the old HQ120/129 series). But the HQ100 was the proving ground. The SPC-10 for the SP600 is the HC-10 reboxed.

The 6 meter portions of this Hammarlund gear worked fair but when faced with Clegg gear for 6 and 2 meters most of us stuck with Clegg. In fairness the PMR-8 was only marginal on 6 as were many of the old converters (national 300/303 series). Frank muses if Hammarlund could have survived to expand the HQ215 series as they did with the HQ100 series amateur radio might be a different place today.

(exerpts from W4AMJ interview on tape 5/98).

Dave K4JRB

Message-ID: <37208395.1DC2@lobo.net>
Date: Fri, 23 Apr 1999 07:28:46 -0700
From: "Herbert M. Rosenthal" <herbrose@lobo.net>
MIME-Version: 1.0
To: Old Tube Radios <boatanchors@theporch.com>
Subject: Rotary Inductor needed
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: 7bit

I am looking for a large, 30 uH or so rotary inductor to build a 160-10 remote, motorized antenna tuner for a longwire, for a fellow ham. I have one from a BC 375 tuning unit (with counter dial), but it is only 20 uH. Have a much smaller one, about 18 uH with a 28v reversible motor, but not enough inductance..and it's only wound with #18.

For a 2 kw tuner that will be mounted about 100 ft from the shack, at one end of the longwire, and fed with coax and a shielded control wire. Ten turn pots tracking the position of L and C will read out on small meters at the operating position, so that the tuner may be preset to a given frequency.

I have a 10-1000 pf vacuum for the capacitor, so am covered here.

Will probably use screwdriver motors and their hex drive to operate the L and the C, with limit switches to prevent overtravel.

I built one of these in KS in the '70s for a 680 ft longwire, and it worked great... much better than bringing one end of the longwire antenna into the tuner in the shack, and suffer the slings of near radiation, TVI, etc., that always seem to come with this configuration.

Please contact me directly if you have something suitable.

Thanks,

Herb Rosenthal W5AN
herbrose@lobo.net

Content-return: allowed
Date: Fri, 23 Apr 1999 08:31:29 -0500
From: "Schroeder, Russell G" <Russell.Schroeder@usa.xerox.com>
Subject: For Sale: Various items / equipment
To: Old Tube Radios <boatanchors@theporch.com>
Cc: "Schroeder, Russell G" <Russell.Schroeder@usa.xerox.com>
Message-id:
<9F978D0493DBD1119C2D00805FC7361501852DFF@usa0207ms1.eng.mc.xerox.com>
MIME-version: 1.0
Content-type: text/plain; charset="iso-8859-1"

Hollowstaters,

I got the "order" to reduce the volume of equipment / parts.

Swan 250 w/ 117-xc AC power supply, optional CW filter, Turner 454 desk mike, copy of the 250 manual and AF-800 CW filter manual. Excellent physical and operating condition $250 + shipping.

PTO, Dubrow Electronics Type 689-BM128 w/ 2ea 5749/6ba6W (labeled V801 and V802). I believe this is from a T-195, untested. $25 + shipping

Hammarlund HX-50A - acquired as part of an equipment swap - appears to be in good condition, all tubes and original knobs. Untested, no manual $100 + shipping

URM-25D Signal Generator w/ cover and accessories. Working with good attenuator. No manual. $125 + shipping

TS-175/U frequency meter, 85-1000 Mc w/ internal AC supply and original calibration book. Good condition. $35 + shipping

HW-101 Heathkit transceiver, w/ narrow (6 pole) CW filter. Original manual. No power supply. Untested. Good Condition, no mods, all tubes, original knobs. $125 + shipping

LS-454/U speaker w/ U229/U connector. Good working condition, outer paint shows wear. $10 + shipping

Swinging choke - Hobart Electronics C-732 5-25H, 500-50 ma, 65 ohms. $30 + shipping

FT-162 shock mount plate $5 + shipping

MT-768/URR Shock mount assembly $5 + shipping

RAL-5 receiver #CRV-46045 - complete, untested, front has been repainted (black), original knobs, no modifications or holes $100 + shipping (prefer pickup or deliver @ Rochester, NY, hamfest June 4,5,6)*

TCS-12, includes transmitter, receiver, remote control box, AC power supply, transmitter and receiver cables (long), remote cable (short) and T-17 mike. Presently on the air. $250 + shipping (prefer pickup or deliver @ Rochester, NY, hamfest June 4,5,6)*

*On the heavy / large items, willing to arrange exchange within a reasonable distance of Rochester, NY if that helps.

More items to come as the reduction continues.

73 Russ W2DYY

Russell.Schroeder@usa.xerox.com

Message-Id: <3.0.6.32.19990423102248.007a7bd0@pop.voyager.net>
Date: Fri, 23 Apr 1999 10:22:48 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: Kim Herron <kherron@voyager.net>
Subject: RE: "Needs Alignment"
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

Hi Gang,

I've been watching and reading this thread and I've had several good laughs because of it.

I, like Larry Ware, have been repairing and refurbishing BA's for years. It's the old dinosaurs like us that keep the interest level in older gear alive and happy. They don't teach tube theory any more in tech schools and those of use who went to school before solid state was really big are getting a bit long in the tooth.

That said, I figured I'd throw in my two cents on this topic. I've purchased many receivers that "need alignment" and very often that's all they really need (I do a LOT of Hammarlund gear-no SP-600's). Things like HQ-170's and 180's usually don't need much other than to have the electrolytics changed out and a tube or two replaced (I have a LARGE stock of 6C4's and 6BA6's for that reason). turn the old girl on and let it bake for three or four weeks to drive out all the moisture and it will be surprisingly close before we tweak it up to snuff.

But there is one thing that I've found over the years and this gets to the crux of the matter. The test equipment on the bench is directly related to how well the receiver works when it's put back in the cabinet. I gave up using things made by Sencore, Triplett, B&K, Heath, etc, for a signal generator. I have an HP 606B with an 8708 Syncronizer, for RF alignment, an HP8601 with and HP8600 digital marker for IF alignment (yes it will work down to 50kHz even though it's not spec'd for it), and an HP1741A to watch what's going on with the AVC and the IF waveform. Let's not forget about the freq counter to verify the EXACT frequency that we're working at. Hammarlund IF strips don't work well at anything but the designed frequency. If this sound like overkill, it may be. But when you look at what the factory used to get these old triple conversion radios up and working at the end of the assembly line, it may not be. It always amazes me just how close the adjustments in a 170 or 180 are when I start at the 3rd IF and get the oscillator at 60 kHz first. Often, by the time I get to the RF end of things, I'm not moving slugs or caps hardly at all. However, if you want a REAL chore, align the 3rd IF at 65 kHz and watch what happens. You'll be there for days trying to get it right and make the dial track.

The point of all this is, many times it's beyond the sellers ability to align a piece of equipment right. Maybe he's tried and made it worse and doesn't want to admit it. I've bought Heath Transceivers that (SB/HW series) that are easy to work on but don't work because the fellow that sold it was using a 20K/volt VOM and got the HFO oscillator all out of wack. Put the TEK scope or the Fluke DMM on it, adjust the coils, and all of a sudden, it's receiving on all bands and even making RF output. All for a lousy meter.

Perhaps, at Dayton this year, we should give the radio gear a bit of a rest, and go to the back of the fleamarket and invest in some decent test gear. We'd all get a lot less frustrated and have a lot more FUN!!

Kim W8ZV

Message-Id: <3.0.1.32.19990423091537.00a62550@vuse.vanderbilt.edu>
Date: Fri, 23 Apr 1999 09:15:37 -0500
To: Old Tube Radios <boatanchors@theporch.com>
From: "A. B. Bonds" <ab@vuse.vanderbilt.edu>
Subject: Re: Correction - Phasitrons was Re: Phasotrons
Mime-Version: 1.0
Content-Type: text/plain; charset="us-ascii"

At 02:29 AM 4/23/99 -0400, you wrote:
>
>In addition to the GE Phasitron, Seely's book covers the RCA and Federal methods of all-electronic stabilization of early FM broadcast systems, and also the Bell Laboratories method which used a synchronous motor in a servomechanism to keep the oscillator center frequency locked to a crystal standard.

Small world, but I wouldn't want to paint it. Of course, the SECOND transmitter acquired by WVBR (after the G. E. Phasitron unit) was a Western Electric, of synchronous motor fame. This creature used reactance tube modulation (output was a pair of 357B's making nominally a kW, but that's another story....). Since you can't get much deviation from a reactance tube, it used a ten stage frequency multiplier to get up to the FM band. I have a copy of the manual somewhere. The base (crystal) frequency was something like 800 kHz (foggy memory...) and the synchronous motor was used to tweak a capacitor to maintain the center frequency in the event of too much deviation. It was fun watching the thing wobble back and forth--used a ladder chain drive to the cap. The two funzies it would make: On a couple of occasions, the servo loop broke down and the motor started turning continuously. We got a call when the carrier started slamming a nearby station.... The worst problem was that a diode would go in one of the ten multipliers. There was, however, no easy way to get to the individual stages for measurements, so you had to do the replacements by guess and by golly. We sold the carcass for $10, and there was much jubilation when it left he shack.

A. B. Bonds

To: Old Tube Radios <boatanchors@theporch.com>
Cc: boatanchors@theporch.com
Date: Fri, 23 Apr 1999 07:48:08 -0500
Subject: Re: Loktals
Message-ID: <19990423.093852.18582.1.jackiv@juno.com>
From: John M Iverson <jackiv@juno.com>

how about the loctals in the motorola 2-way gear? all those 7C7s that
show up at all the hamfests for instance.   jack
Jack Iverson   K0EWU   jackiv@juno.com
ARRL, IEEE LM, RCA, AMI, ARCI, QCWA,CCA

On Thu, 22 Apr 1999 17:48:23 EDT FRANKK6NL@aol.com writes:
>There have been several comments here re Loktals and I would like to
>supply
>some early background. The only reason for their developement was
>their
>potentially lower manufacturing cost. Also they got around around the
>patents
>RCA held on the base configuration of the metal tubes. That they
>were
>better in VHF applications was only incidental ; but surely
>appreciated by
>designers in that small market.
> There were early use problems and the same continued to a lesser
>degree for
>a long time .First, the glass lead seals had a tendency to cracks
>particularily when subjected to strains or temperature extremes.
>Secondly the
>exhaust tube came down inside the central locating pin. If it were
>off
>center and touching the central locating pin it too was subject to
>breakage .
>Finally though they were called "Loktals", under shock some depending
>on the
>socket used did not stay in their sockets as well as metal or "GT's
>" !!
>But that was a minor matter.
>
>Motorola was in those days the dominant manufacturer of auto radios
>and were
>among the first to use Loktals . In the winter of the first
>production year
>(circa de 1937) they had built up a large inventory of auto radios
>for
>their summer sales . Then they discovered that many of the radios

>while in
>inventory had become were dead due to defective Loktals. The situation
>became
>so bad that Motorola shifted over their production to GTs and
>resocketed and
>retubed many of those previously produced Loktal sets to that
>construction
>as well. Motorola never used Loktals again but stuck with the GTs.
>Even two
>years later when the Delco Div of GM began using Loktals in their car
>radios
>these problems were still there though to a more tolerable degree.
>
>
>   Frank   K6NL
>
>

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